IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit	:	1795
Examiner	:	Helen OK Chu
Appellants	:	Mark A. Schubert et al.
Serial No.	:	10/682,223
Filed	:	October 9, 2003
Confirmation No.	:	8111
For	:	NONAQUEOUS CELL WITH IMPROVED THERMOPLASTIC SEALING MEMBER

Dear Sir:

APPEAL BRIEF (37 C.F.R. § 41.37)

This brief is in furtherance of the Notice of Appeal filed in this case on December 23, 2008. Appellants submit that the Notice of Appeal and Appeal Brief fees were previously paid, and believe that only the increases in Appeal fees are currently due. However, if any fees are required under 37 U.S.C. § 41(a)(6), they are to be charged to Deposit Account No. 16-2463.

This brief contains these items under the following headings, and in the order set forth below (37 C.F.R. § 41.37(c)):

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III. Status of Claims

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- A. Independent Claim 1
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VI. Grounds of Rejection to be Reviewed on Appeal

A. Claims 1, 2, 6-9, 11, and 12 Stand Rejected Under 35 U.S.C. § 102(e) As Being Anticipated By U.S. Patent Application Publication No. 2003/0118902 A1 to Schubert et al.

B. Claims 1-15, 18, and 20-22 Stand Rejected Under 35 U.S.C. § 103(a) As Unpatentable Over U.S. Patent No. 4,592,970 to Zupanic In View Of U.S. Patent No. 6,468,691 to Malay et al. In Further View Of U.S. Patent No. 4,580,790 to Doose

C. Claims 16, 17 and 23 Stand Rejected Under 35 U.S.C. § 103(a) As Unpatentable Over U.S. Patent No. 4,592,970 to Zupanic In View Of U.S. Patent No. 6,468,691 to Malay et al. In Further View Of U.S. Patent No. 4,580,790 to Doose In Further View Of U.S. Patent No. 4,482,613 to Turchan et al.

D. Claims 19, 24 and 25 Stand Rejected Under 35 U.S.C. § 103(a) As Unpatentable Over U.S. Patent No. 4,592,970 to Zupanic In View Of U.S. Patent No. 6,468,691 to Malay et al. In Further View Of U.S. Patent No. 4,580,790 to Doose In Further View Of U.S. Patent No. 5,183,594 to Yoshinaka et al.

VII. Argument

A. Rejection of Claims 1, 2, 6-9, 11, 12

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The Final page of this brief bears the attorney's e-signature.

I. REAL PARTY IN INTEREST

The real party in interest in this application is Eveready Battery Company, Inc., the assignment to which was recorded at Reel 014594, Frame 0440, on October 9, 2003.

II. RELATED APPEALS AND INTERFERENCES

Appellants are aware of no appeals, interferences or judicial proceedings which may be related to, directly affect, or be directly affected by, or have a bearing on, the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

This is an appeal from a Final Rejection of claims 1-25 mailed on September 23, 2008. Claims 1-25 are currently pending in the present application and are rejected. No claims currently stand allowed. The rejection of claims 1-25 is appealed.

IV. STATUS OF AMENDMENT

There were no amendments made to any of pending claims 1-25 during the prosecution of U.S. Patent Application No. 10/682,223.

V. SUMMARY OF CLAIMED SUBJECT MATTER

A. Independent Claim 1

Independent claim 1 defines an electrochemical battery cell (10) comprising: a housing comprising a metal container (14) with at least one open end and at least a first metal cover disposed in the at least one open end of the container; a positive electrode (20); a negative electrode (18); a separator (26) disposed between the positive and negative electrodes (20, 18); an electrolyte; and a first thermoplastic seal member (page 7, lines 5-10; page 9, lines 5-31;

Fig. 1), comprising a thermoplastic resin and more than 10 weight percent of a thermal-stabilizing filler (page 7, lines 10-12), the first thermoplastic seal member sealing an aperture in at least one of the container and the first cover (14) and forming at least a part of a pressure relief vent for releasing pressure from the cell (10) (page 7, lines 12-14; page 9, lines 5-31; Fig. 1).

B. Dependent Claim 5

Dependent claim 5 defines an electrochemical battery cell (10) comprising: a housing comprising a metal container (14) with at least one open end and at least a first metal cover disposed in the at least one open end of the container; a positive electrode (20); a negative electrode (18); a separator (26) disposed between the positive and negative electrodes (20, 18); an electrolyte; and a first thermoplastic seal member (page 7, lines 5-10; page 9, lines 5-31; Fig. 1), comprising a thermoplastic resin and more than 10 weight percent of a thermal-stabilizing filler (page 7, lines 10-12), the first thermoplastic seal member sealing an aperture in at least one of the container and the first cover (14) and forming at least a part of a pressure relief vent for releasing pressure from the cell (10) (page 7, lines 12-14; page 9, lines 5-31; Fig. 1), wherein the filler comprises glass, and wherein the glass comprises an E-glass (page 10, lines 31-32).

C. Independent Claim 18

Independent claim 18 defines an electrochemical battery cell (10) comprising: a housing comprising a metal container with at least one open end and at least a first metal cover

disposed in the at least one open end of the container; a pressure relief vent; a positive electrode (20); a negative electrode (18) comprising at least one member of the group consisting of lithium, a lithium alloy and a lithium intercalation compound; a separator (26) disposed between the positive and negative electrodes (20, 18); a nonaqueous electrolyte comprising an organic solvent; and a first thermoplastic seal member sealing an aperture in the first cover (14) (page 7, lines 15-22; page 9, lines 5-31; Fig. 1); wherein the thermoplastic seal member: is made from a material comprising at least one polymeric resin selected from the group consisting of ethylene-tetrafluoroethylene, polybutylene terephthlate, polyphenylene sulfide, polyphthalamide, ethylene-chlorotrifluoroethylene, chlorotrifluoroethylene, perfluoroalkoxyalkane, fluorinated perfluoroethylene polypropylene and polyetherether ketone, as well as more than 10 weight percent of a thermal-stabilizing filler; has a hollow cylindrical shape; and cooperates with the first metal cover (14) and a plug disposed within the thermoplastic seal member to form a compression seal for the aperture and to release pressurized gas from within the cell (10) when a cell internal pressure exceeds a predetermined level (page 7, lines 22-30; page 9, lines 5-31; Fig. 1).

D. Dependent Claim 21

Dependent claim 21 defines an electrochemical battery cell (10) comprising: a housing comprising a metal container with at least one open end and at least a first metal cover disposed in the at least one open end of the container; a pressure relief vent; a positive electrode (20); a negative electrode (18) comprising at least one member of the group

consisting of lithium, a lithium alloy and a lithium intercalation compound; a separator (26) disposed between the positive and negative electrodes (20, 18); a nonaqueous electrolyte comprising an organic solvent; and a first thermoplastic seal member sealing an aperture in the first cover (14) (page 7, lines 15-22; page 9, lines 5-31; Fig. 1); wherein the thermoplastic seal member: is made from a material comprising at least one polymeric resin selected from the group consisting of ethylene-tetrafluoroethylene, polybutylene terephthlate, polyphenylene sulfide, polyphthalamide, ethylene-chlorotrifluoroethylene, chlorotrifluoroethylene, perfluoroalkoxyalkane, fluorinated perfluoroethylene polypropylene and polyetherether ketone, as well as more than 10 weight percent of a thermal-stabilizing filler; has a hollow cylindrical shape; and cooperates with the first metal cover (14) and a plug disposed within the thermoplastic seal member to form a compression seal for the aperture and to release pressurized gas from within the cell (10) when a cell internal pressure exceeds a predetermined level (page 7, lines 22-30; page 9, lines 5-31; Fig. 1), wherein the filler comprises glass fibers comprising an E-glass (page 10, lines 31-32).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1, 2, 6-9, 11, and 12 Stand Rejected Under 35 U.S.C. § 102(e) As Being Anticipated By U.S. Patent Application Publication No. 2003/0118902 A1 to Schubert et al.

B. Claims 1-15, 18, and 20-22 Stand Rejected Under 35 U.S.C. § 103(a) As Unpatentable Over U.S. Patent No. 4,592,970 to Zupanic In View Of U.S. Patent No. 6,468,691 to Malay et al. In Further View Of U.S. Patent No. 4,580,790 to Doose

C. Claims 16, 17 and 23 Stand Rejected Under 35 U.S.C. § 103(a) As Unpatentable Over U.S. Patent No. 4,592,970 to Zupanic In View Of U.S. Patent No. 6,468,691 to Malay et al. In Further View Of U.S. Patent No. 4,580,790 to Doose In Further View Of U.S. Patent No. 4,482,613 to Turchan et al.

D. Claims 19, 24 and 25 Stand Rejected Under 35 U.S.C. § 103(a) As Unpatentable Over U.S. Patent No. 4,592,970 to Zupanic In View Of U.S. Patent No. 6,468,691 to Malay et al. In Further View Of U.S. Patent No. 4,580,790 to Doose In Further View Of U.S. Patent No. 5,183,594 to Yoshinaka et al.

VII. ARGUMENT

A. Rejection of Claims 1, 2, 6-9, 11, 12

Of this group of claims, claim 1 is an independent claim. Claims 2, 6-9, 11, and 12 depend from claim 1. Claims 1, 2, 6-9, 11 and 12 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0118902 A1 to Schubert et al. ("Schubert"). As further discussed below, Appellants respectfully traverse this rejection.

The *Manual of Patent Examining Procedure* ("MPEP") states that, in order to anticipate a claim, each and every element as set forth in the claim must be found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California,* 814 F.3d 628, 631 (Fed. Cir. 1987); MPEP § 2131. Further, dependent claims include all the limitations of the claims with which they depend. MPEP § 608.01(n).

Claims 1, 2, 6-9, 11 and 12 all require a first thermoplastic seal member comprising a thermoplastic resin and more than 10 weight percent of a thermal-stabilizing filler.

In the Examiner's opinion, Schubert discloses a thermoplastic resin and more than 10 weight percent of a thermal-stabilizing filler. Specifically, the Examiner stated:

> The [Schubert] thermoplastic seal member made of more than 30 percent of polyolefin (Applicants thermal-stabilizing filler) balanced aromatic polymer (Applicants thermoplastic resin) such as polyphenylene sulfides.

* * *

> Schubert '908 [sic] reference specifically discloses a 30 weight percent of thermoplastic material (Applicants thermoplastic-stabilizing filler) balanced polyphenylene sulfides as thermoplastic resin. Polyphenylene Sulfides are known to be thermoplastic resin and *as it is suggested in Page 13, lines 14-20*. Claim 1 does not specify a particular type of thermoplastic stabilizing filler....The Schubert '902 discloses that the polyolefins are made of polypropylene. Polypropylene are known in the art to be thermoplastics and also it is known in the art to have polypropylene fillers, therefore by broadest interpretation of thermoplastic stabilizing fillers, polypropylene are known to be thermoplastic fillers or thermoplastic-stabilizing fillers.

(Office Action, pp. 3, 11) (emphasis added).[1]

However, based on Appellants' review of Schubert, it appears that the only express disclosure relating to fillers is in the Background of the Invention, which states:

> To reduce the rate of stress relaxation, fillers such as talc, calcium carbonate, carbon black, silica, and the like have been added to the seal member material. However, even when this is done, the stress relaxation rate *may still be higher than desirable*. Mineral fillers also tend to be *distributed non-uniformly after molding, which can lead to non-uniform seal member properties, defects and cell sealing deficiencies*.

(Schubert at [0006] (emphasis added)). First, although fillers are mentioned in the "Background of the Invention" in Schubert, there is not a disclosure that the fillers are actually used in the Schubert electrochemical cell. Instead, the above-cited portion relating to fillers is a

[1] Appellants initially note that the Examiner's *responsive* arguments appear to be incorrect. In the Office Action, the Examiner states that polypropylene are known to be *thermoplastic fillers* or *thermoplastic-stabilizing fillers*. (3/17/08 Office Action, p. 11). However, neither a thermoplastic filler nor a thermoplastic-stabilizing filler are one of the elements of the claims. Rather, the pending claims recite a *thermal*-stabilizing filler. Nothing in Schubert teaches such "thermoplastic" fillers and/or stabilizers relate to or have any influence on the specific properties imparted by the thermal-stabilizing filler contemplated in claim 1. Accordingly, the Examiner responsive arguments appear to be based on an incorrect reading of the claims.

general discussion, without specifically stating in what type of application the fillers and seal member materials were used.[2]

Additionally, the above-cited portion of Schubert does not mention the amount of the filler that was used, much less a disclosure that the filler comprises more than 10 weight percent. Therefore, Appellants respectfully submit that Schubert does not anticipate claims 1, 2, 6-9, 11 and 12 for at least the foregoing reasons.

In response to these arguments, the Examiner stated that above-cited portion of the Background of Schubert was not used to reject the claims; instead, the Examiner contends that polypropylene is a "thermoplastic-stabilizing filler" that is mixed with a polyphenylene sulfide, a thermoplastic resin and, therefore, this combination anticipates the claims. . (3/17/08 Office Action, pp. 10-11). Not only does this fail to appreciate the distinction between thermoplastic stabilizers and thermal-stabilizing fillers, the Examiner's rejection also ignores the teachings of Schubert and the definitions set forth by the Appelants in the specification.

First, Appellants respectfully submit that one having ordinary skill in the art would not have understood the polypropylene to constitute the thermal-stabilizing filler of the claimed invention. Although the Examiner cites the present application in making the rejection, the Examiner fails to also note that the portion cited by the Examiner actually states that polypropylene is used as a thermoplastic ***resin*** in the present application, ***not*** as a ***filler***. (U.S. Patent Application No. 10/682,223 ("'223 application"), page 13, lines 14-26). Indeed, Schubert itself makes distinctions between "fillers" (as noted above) and thermoplastics, such as polypropylene and polyphenylene oxide (the two resins of interest in Schubert). Thus, the Examiner appears to be picking and choosing from Appellants' specification those portions which assist in making the rejection, while ignoring the portions which contradict the Examiner's reasoning. Accordingly, the Examiner has not shown that one of ordinary skill in

[2] Appellants also note that the disclosure relating to fillers teaches away from utilizing fillers since they can lead to non-uniform seal member properties, defects and cell sealing deficiencies. (Schubert at [0006]).

the art would have understood that the polypropylene would comprise the thermal-stabilizing filler of the claimed invention.

Furthermore, there is no evidence that polypropylene or polyolefin as disclosed in Schubert would even qualify as suitable thermal-stabilizing fillers as claimed in the present invention. In the Appellants' specification, there is an express definition of a "thermal-stabilizing filler," which is "a material which, when added to a base resin, will decrease the resin's coefficient of thermal expansion by at least 20 percent and increase the heat deflection temperature by at least 20°C." ('223 application, page 8, lines 17-19). Appellants note that such fillers may be inorganics, such as glass, E-glass, clay, feldspar, graphite, mica, silica, talc and vermiculite, or organic materials, such as carbons. ('223 application, page 10, lines 25-32). Significantly, the specification does not exemplify hydrocarbons (e.g., polypropylene) as thermal-stabilizing fillers, while nothing in Schubert suggests that polypropylene or polyolefin, when added to a polymeric resin, impart the specific characteristics of a thermal-stabilizing filler defined by the Appellants. Indeed, it is the Appellants' position that one of ordinary skill in the art would recognize polypropylene or polyolefin as candidates for a base resin and not as "fillers." Therefore, the Examiner has not shown any evidence that polypropylene or polyolefin is a thermal-stabilizing filler according to the present invention.

Accordingly, for at least the foregoing reasons, Appellants respectfully submit that the Examiner's has failed to carry its burden to prove that the pending claims are anticipated, and therefore respectfully request that the Examiner's rejection be reversed.

B. Rejection of Claims 1-25

Of this group of claims, claims 1 and 18 are independent claims. Claims 2-17 depend from claim 1. Claims 19-25 depend from claim 18. Claims 1-15, 18, and 20-22 are rejected 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 4,592,970 to Zupanic ("Zupanic") in view of U.S. Patent No. 6,468,691 to Malay et al. ("Malay") in further view of U.S. Patent

No. 4,580,790 to Doose ("Doose"). Claims 16, 17 and 23 are rejected under 35 U.S.C. § 103(a) as unpatentable over Zupanic in view of Malay in further view of Doose, in further view of U.S. Patent No. 4,482,613 to Turchan et al. ("Turchan"). Claims 19, 24 and 25 are rejected under 35 U.S.C. § 103(a) as unpatentable over Zupanic in view of Malay in further view of Doose in further view of U.S. Patent No. 5,183,594 to Yoshinaka et al. ("Yoshinaka"). As further discussed below, Appellants respectfully traverse these rejections.

The MPEP sets forth the standard for obviousness and requires some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. MPEP § 2143. The combination of prior art references must have been "obvious to a person of ordinary skill in the art." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007). In order to establish a *prima facie* case of obviousness, there must be some apparent reason why a person of ordinary skill in the art would combine the references, and the analysis should be made explicit. *Id.*

All of the Examiner's obviousness-based rejections are primarily based on a combination of Zupancic, Malay and Doose. In the Examiner's opinion, one of ordinary skill in the art would have combined the electrochemical cell taught in Zupancic with the seal comprising polytetrafluoroethylene (PTFE) and 15-25% E-glass filler disclosed in Doose, for the problem disclosed in Malay.

Appellants respectfully assert that it would not have been obvious to one of ordinary skill in the art to combine the teachings of Zupancic, Doose and Malay to arrive at the claimed invention. The Examiner recognizes that Zupancic and Malay, the references which specifically address electrochemical cells, do not disclose a thermal-stabilizing filler material of more than 10 weight percent. The only reference that the Examiner cites for teaching the "more than 10 weight percent thermal-stabilizing filler" limitation is Doose, which relates to reciprocating and/or rotating surfaces, particularly for rotating shafts and rider rings for use in sealing reciprocating pistons such as those commonly found in pumps, compressors, and as

bearing pads used to support bridges and high rise buildings. (Doose, col. 1 ll. 14-29). Based on Appellants' review of Doose, Appellants are unable to find any reference indicating or even suggesting that the teachings of Doose would be applicable to an electrochemical cell.

Moreover, Appellants assert that one of ordinary skill in the art would not have combined Zupancic with Doose for an additional reason. Each of the claims requires that the seal member provide a pressure relief from the cell to allow it to vent. Zupancic teaches that the liner and seal member are "*resiliently deformable* such that said member is adapted to be at least partially expelled from the vent orifice upon a predetermined internal gas pressure buildup within the cell to provide a permanent vent for the cell." (Zupancic, col. 3 ll. 28-35 (emphasis added)). In contrast, Doose teaches that the purpose of incorporating filler in the PTFE is to "*prevent the PTFE from becoming deformed* during continued use." (Doose, col. 1 ll. 37-39 (emphasis added)). Since the prevention of deformation is contrary to venting, which essentially involves deformation of the seal, the Examiner's proposed modification of the references would render the prior art unsatisfactory for its intended purpose. MPEP § 2143.01(V). Accordingly, Appellants submit that one of ordinary skill in the art would not have combined the Doose seal, which prevents the PTFE from deforming, with the Zupancic cell, which needs to deform the seal to vent, to arrive at the claimed invention.

Accordingly, for at least the foregoing reasons, Appellants respectfully request that the Examiner's rejections be reversed.

C. Rejection of Claims 5 and 21

Of this group of claims, claims 5 and 21 are dependent claims. Claim 5 depends from independent claim 1, and claim 21 depends from independent claim 18. Appellants assert that claims 5 and 21 are allowable for an additional reason presented below.

Claims 5 and 21 both require the thermal-stabilizing filler to comprise E-glass. The Examiner rejected claims 5 and 21 as obvious based on the combination of Zupancic, Malay and Doose. In the Examiner's opinion, it would have been obvious to one of ordinary skill in

the art to incorporate 15% to 25% E-glass as disclosed by Doose into the electrochemical cell taught in Zupancic, for the problem disclosed in Malay.

The Examiner stated that Doose discloses seals comprising PFTE and 15-25% E-glass filler. (Office Action, p. 6). However, a careful review of Doose shows that Doose actually teaches away from utilizing E-Glass since it states:

> When PTFE seals utilizing E-Glass as the filler material are used as a seal or support between metal parts or other materials having a similar or lower hardness than the E-Glass, *considerable wear debris is generated during movement of the parts. This is an especially critical problem in expensive compressor and pump equipment where the generation of wear debris between the E-Glass reinforced PTFE and metal parts results in premature failure of the equipment requiring tear-down, inspection and rebuilding of the apparatus*.
>
> *It would be desirable to provide a PTFE material having a suitable alternative filler material* which provides adequate structural strength to the PTFE and resistance to cold creep, while at the same time limiting the amount of wear debris generated between the PTFE and the surfaces which rub against the PTFE during operation of the equipment.
>
> * * *
>
> In accordance with the present invention, a composite PTFE material is provided which is structurally strong or stronger than PTFE filled with E-Glass and which generates significantly less wear debris than seals, bushings and rider rings made from PTFE filled with E-Glass.

(Doose, col. 1 lines 50-65; col. 2, lines 7-12 (emphasis added)). After considering the disclosure of Doose in its entirety, including the portions which teach away from the claimed invention, Appellants respectfully submit that one having ordinary skill in the art would have been discouraged from incorporating E-glass as a filler into the electrochemical cell of Zupancic to arrive at the claimed invention.

Accordingly, Appellants assert that claims 5 and 21 are allowable for this additional reason.

D. Conclusion

For the reasons set forth above, when properly considering the cited reference, and as is apparent from examining the invention defined by claims 1-25, these define patentable subject matter. Accordingly, reversal of the Examiner's rejections of these claims is appropriate and respectfully solicited.

Respectfully submitted,

December 23, 2008
Date

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IX. CLAIMS APPENDIX (37 C.F.R. § 41.27(c)(1)(viii))

1. An electrochemical battery cell comprising:

a housing comprising a metal container with at least one open end and at least a first metal cover disposed in the at least one open end of the container;

a positive electrode;

a negative electrode;

a separator disposed between the positive and negative electrodes;

an electrolyte; and

a first thermoplastic seal member, comprising a thermoplastic resin and more than 10 weight percent of a thermal-stabilizing filler, the first thermoplastic seal member sealing an aperture in at least one of the container and the first cover and forming at least a part of a pressure relief vent for releasing pressure from the cell.

2. The cell as defined in claim 1, wherein the first thermoplastic seal member comprises at least 15 weight percent of the thermal-stabilizing filler.

3. The cell as defined in claim 1, wherein the filler comprises a glass.

4. The cell as defined in claim 3, wherein the glass comprises glass fibers.

5. The cell as defined in claim 3, wherein the glass comprises an E-glass.

6. The cell as defined in claim 1, wherein cell further comprises a second thermoplastic seal member providing a seal between the container and the first cover.

7. The cell as defined in claim 1, wherein the first thermoplastic seal member comprises a hollow cylindrical shape and is disposed within the aperture in the first metal cover.

8. The cell as defined in claim 7, wherein the pressure relief vent further comprises a plug disposed within the first thermoplastic seal member and the first metal cover, the first thermoplastic seal member and the plug cooperate to form a compression seal for the aperture.

9. The cell as defined in claim 8, wherein the plug is in the form of sphere.

10. The cell as defined in claim 9, wherein the plug comprises one member of the group consisting of a metal and a glass.

11. The cell as defined in claim 7, wherein the first thermoplastic seal member is a plug and the pressure relief mechanism consists of the plug disposed within the aperture in the first metal cover.

12. The cell as defined in claim 1, wherein the electrolyte is a nonaqueous electrolyte.

13. The cell as defined in claim 12, wherein the electrolyte comprises an organic solvent.

14. The cell as defined in claim 13, wherein the negative electrode comprises at least one member of the group consisting of lithium, a lithium alloy and a lithium intercalation compound.

15. The cell as defined in claim 14, wherein the positive electrode comprises at least one member of the group consisting of iron disulfide, manganese dioxide and a lithium intercalation compound.

16. The cell as defined in claim 13, wherein the organic solvent comprises at least one ether compound.

17. The cell as defined in claim 16, wherein the organic solvent comprises at least 80 volume percent of one or more ethers having a boiling point no greater than 90° C.

18. An electrochemical battery cell comprising:

a housing comprising a metal container with at least one open end and at least a first metal cover disposed in the at least one open end of the container;

a pressure relief vent;

a positive electrode;

a negative electrode comprising at least one member of the group consisting of lithium, a lithium alloy and a lithium intercalation compound;

a separator disposed between the positive and negative electrodes;

a nonaqueous electrolyte comprising an organic solvent; and

a first thermoplastic seal member sealing an aperture in the first cover;

wherein the thermoplastic seal member:

is made from a material comprising at least one polymeric resin selected from the group consisting of ethylene-tetrafluoroethylene, polybutylene terephthlate, polyphenylene sulfide, polyphthalamide, ethylene-chlorotrifluoroethylene, chlorotrifluoroethylene, perfluoroalkoxyalkane, fluorinated perfluoroethylene polypropylene and polyetherether ketone, as well as more than 10 weight percent of a thermal-stabilizing filler;

has a hollow cylindrical shape; and

cooperates with the first metal cover and a plug disposed within the thermoplastic seal member to form a compression seal for the aperture and to release pressurized gas from within the cell when a cell internal pressure exceeds a predetermined level.

19. The cell as defined in claim 18, wherein the at least one polymeric resin is selected from the group consisting of ethylene-tetrafluoroethylene, polybutylene terephthlate, polyphenylene sulfide and polyphthalamide.

20. The cell as defined in claim 18, wherein the first thermoplastic seal member comprises at least 15 weight percent of the thermal-stabilizing filler.

21. The cell as defined in claim 18, wherein the filler comprises glass fibers comprising an E-glass.

22. The cell as defined in claim 18, wherein the hollow cylindrical shape has a wall with an average original thickness, before the first thermoplastic seal member is placed into the first metal cover aperture, of 0.006 to 0.015 inch and is compressed by an average of 25 to 40 percent of the original thickness between the first metal cover and the plug.

23. The cell as defined in claim 19, wherein the organic solvent comprises at least 90 volume percent ethers with boiling points no greater than 90° C.

24. The cell as defined in claim 19, wherein the at least one resin is selected from the group consisting of ethylene-tetrafluoroethylene and polybutylene terephthlate.

25. The cell as defined in claim 24, wherein the resin is ethylene-tetrafluoroethylene.

X. EVIDENCE APPENDIX (37 C.F.R. § 41.37(c)(1)(ix))

None.

XI. Related Proceedings Appendix (37 C.F.R. § 41.37(c)(1)(x))

There are no related appeals or interferences pending during this application.